

9.36.2.2.

Determination of Thermal Characteristics of Materials, Components and Assemblies

1) The thermal characteristics of materials shall be determined by calculation or by testing in accordance with the applicable product standards listed in the Code or, in the absence of such standards or where such standards do not address the determination of thermal resistance, in accordance with

- a) ASTM C 177, "Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus," or
- b) ASTM C 518, "Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus."

(See Table A-9.36.2.4.(1)-D for the thermal characteristics of commonly used materials.)

2) Calculations and tests performed in accordance with Sentence (1) shall be carried out at an average temperature of $24\pm 2^{\circ}\text{C}$ and under a temperature differential of $22\pm 2^{\circ}\text{C}$.

3) The thermal characteristics of windows, doors and skylights shall be determined by calculation or testing in accordance with

- a) CSA A440.2/A440.3, "Fenestration Energy Performance/User Guide to CSA A440.2-14, Fenestration Energy Performance," for the reference sizes listed therein, or
- b) NFRC 100, "Determining Fenestration Product U-factors," and NFRC 200, "Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence," for the reference sizes listed therein.

(See Note A-9.36.2.2.(3).)

4) The effective thermal resistance of opaque *building* assemblies shall be determined from

- a) calculations conforming to Article 9.36.2.4., or
- b) laboratory tests performed in accordance with ASTM C 1363, "Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus," using an indoor air temperature of $21\pm 1^{\circ}\text{C}$ and an outdoor air temperature of $-18\pm 1^{\circ}\text{C}$.

5) The thermal characteristics of log walls shall be determined by calculation in accordance with Section 305 of ICC 400, "Design and Construction of Log Structures." (See Note A-9.36.2.2.(5).)